

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Canceled).

Claim 2 (Previously Presented): The method according to claim 21, wherein said step of applying hydrogen peroxide to said packaging sheet material comprises applying liquid hydrogen peroxide thereto at an effective concentration of up to 50% by weight.

Claim 3 (Previously Presented): The method according to claim 21, wherein said step of applying hydrogen peroxide to said packaging sheet material comprises applying liquid hydrogen peroxide at a concentration of from 20% by weight to 40% by weight.

Claim 4 (Previously Presented): A method for sterilizing a packaging sheet material, the method comprising:

applying a liquid solution of hydrogen peroxide to the surface of a packaging sheet material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide;

applying a stream of air to said packaging sheet material for removing a substantial amount of hydrogen peroxide from the surface of the packaging sheet

material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and

irradiating the surface of said packaging sheet material with UV light having a wavelength between about 200nm and 320nm;

wherein said step of applying hydrogen peroxide to said packaging sheet material comprises the step of immersing said packaging sheet material in a hydrogen peroxide bath at a temperature between 15 degrees Centigrade and 80 degrees Centigrade, for a time interval of from 0.5 seconds to 2 seconds.

Claim 5 (Previously Presented): A method for sterilizing a packaging sheet material, the method comprising:

applying a liquid solution of hydrogen peroxide to the surface of a packaging sheet material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide;

applying a stream of air to said packaging sheet material for removing a substantial amount of hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and

irradiating the surface of said packaging sheet material with UV light having a wavelength between about 200nm and 320nm;

wherein said step of removing a substantial amount of hydrogen peroxide from said packaging sheet material comprises blowing a stream of heated air,

heated to a temperature from 80 degrees Centigrade to 150 degrees Centigrade onto said packaging sheet material; and

wherein said packaging sheet material is hydrophobic.

Claim 6 (Previously Presented): The method according to claim 21, wherein said step of irradiating the surface of said packaging sheet material with UV light comprises irradiating said packaging sheet material with polychromatic UV light.

Claims 7-14 (Canceled).

Claim 15 (Previously Presented): An apparatus for sterilizing a packaging material comprising:

(a) means for applying a hydrogen peroxide solution to a surface of a packaging material,

(b) means for directing a stream of air on the surface of said packaging material to remove hydrogen peroxide,

(c) means for irradiating said packaging material with UV light having a UV wavelength between 200nm and 320nm, with respect to said advancement direction, and

(d) means for advancing the packaging material continuously from the applying means to the irradiating means and through the air stream directing means;

wherein a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging material is directly targeted with UV radiation; and

wherein said means for applying hydrogen peroxide includes a bath having a depth of less than 50cm.

Claim 16 (Canceled).

Claim 17 (Previously Presented): The apparatus according to claim 26, wherein said means for irradiating the packaging sheet material with light includes at least one lamp producing UV light source having a wavelength between about 200nm and 320nm.

Claim 18 (Previously Presented): The apparatus according to claim 26, wherein the UV light source includes at least one excimer lamp.

Claims 19-20 (Canceled).

Claim 21 (Previously Presented): A method for sterilizing a packaging sheet material, the method comprising:

applying a liquid solution of hydrogen peroxide to the surface of a packaging material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide;

applying a stream of air to the packaging sheet material for removing the hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and

irradiating the surface of the packaging material with UV light having a wavelength between about 200nm and 320nm.

Claim 22 (Previously Presented): A method for rendering any microorganisms present on the surface of packaging sheet material non-viable, the method comprising:

advancing continuously the sheet material through a bath of liquid hydrogen peroxide having a concentration of at least 10% by weight;

blowing air against a surface of the sheet material, the air being heated to a temperature of between 80 degrees Centigrade and 150 degrees Centigrade, for removing hydrogen peroxide from the surface of the sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on the sheet material; and

directing UV light onto the surface of the sheet material containing the hydrogen peroxide absorbed by or located adjacent to the microorganisms, whereby the synergy between hydrogen peroxide and the UV light kills the microorganisms.

Claim 23 (Previously Presented): A method for sterilizing packaging material comprising:

applying a hydrogen peroxide solution on the surface of a packaging material while any microorganisms on the surface absorb hydrogen peroxide;

removing a substantial amount of hydrogen peroxide from the surface of said packaging material while retaining a residual or trace quantity of hydrogen peroxide

absorbed by or located adjacent to any microorganisms present on said packaging material;

irradiating said packaging material with UV light having a wavelength of between about 200nm and 320nm; and

advancing said packaging material continuously and at the same rate through the removing step and the irradiating step.

Claim 24 (Previously Presented): The method according to claim 23, wherein the coating applying step includes passing the packaging material through a bath of hydrogen peroxide having a concentration of 20% to 40% by weight.

Claim 25 (Previously Presented). The method according to claim 23, wherein the removing step includes applying a stream of air to the surface of the packaging material, the air stream having a temperature of between 80°C and 150°C.

Claim 26 (Previously Presented): An apparatus for sterilizing a packaging material comprising:

(a) means for applying a hydrogen peroxide solution to a surface of a packaging material,

(b) means for directing a stream of air on the surface of said packaging material to remove hydrogen peroxide,

(c) means for irradiating said packaging material with UV light having a UV wavelength between 200nm and 320nm, with respect to said advancement direction, and

(d) means for advancing the packaging material continuously from the applying means to the irradiating means and through the air stream directing means; wherein a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging material is directly targeted with UV radiation.

Claim 27 (Previously Presented): The apparatus according to claim 26, wherein said irradiating means includes an eximer lamp.

Claim 28 (New): A method for sterilizing a packaging sheet material comprising the following steps:

(1) applying a liquid solution of hydrogen peroxide to the surface of a packaging sheet material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide;

(2) applying a stream of air to said packaging sheet material for removing a substantial amount of hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and

(3) irradiating the surface of said packaging sheet material with UV light having a wavelength between about 200nm and 320nm;

wherein said step of applying hydrogen peroxide to said packaging sheet material comprises the step of immersing said packaging sheet material in a

hydrogen peroxide bath at a temperature between 15 degrees Centigrade and 80 degrees Centigrade, for a time interval of from 0.5 seconds to 2 seconds;

wherein said step of removing a substantial amount of hydrogen peroxide from said packaging sheet material comprises blowing a stream of heated air, heated to a temperature from 80 degrees Centigrade to 150 degrees Centigrade onto said packaging sheet material; and

wherein said packaging sheet material is hydrophobic.